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JF

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/523,820	03/13/00	FETCENKO	M OBC-99

PHILIP H SCHLAZER
ENERGY CONVERSION DEVICES INC
1675 W MAPLE ROAD
TROY MI 48064

IM52/1019

EXAMINER

NGUYEN, C

ART UNIT

PAPER NUMBER

1754

DATE MAILED:

8
10/19/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.
09/523,820

Applicant(s)
Fetcenko et al.

Examiner
Cam Nguyen

Art Unit
1754



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE three MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on amendment/response filed on 7/30/01.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-70 and 80-89 is/are pending in the application.
- 4a) Of the above, claim(s) 56-70 and 80-89 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-55 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- a) ☐ All b) ☐ Some* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- *See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892)
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____
- 18) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other: _____

Art Unit: 1754

DETAILED ACTION

Status of restriction/election

1. This application contains claims 56-70 which drawn to an invention nonelected *without traverse* in Paper No. 8. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

Claim Objections

2. Claims 9 & 10 are objected to because of the following informalities: a comma “ , ” in line 3 after “nickel” is not needed since only two components are listed in the markush group. The comma should be deleted.

Appropriate correction is required.

Claim Rejections - 35 USC § 102(b)

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-10, 15-17, 19-22, 30-37, 42-44, & 47-49 are rejected under 35 U.S.C. 102(b) as being anticipated by Ward (U.S Pat. 4,686,030).

Art Unit: 1754

Ward discloses a catalyst comprising at least one active nickel hydrogenation metal component, at least one active molybdenum hydrogenation metal component, and at least one phosphorus component on an amorphous porous refractory oxide support (see col 11, ln 40-49), said catalyst having a pore size distribution wherein at least about 75%, preferably at least about 80%, and most preferably at least about 85% of the total pore volume is in pores of diameter in the range from about 50 to about 130 angstroms (see col 5, ln 30-35), and less than about 10 % of the total pore volume is in pores of diameter below about 50 angstroms (see col 5, ln 35-38). Ward further discloses that said catalyst has a mode pore diameter in the range of from about 55 to about 100 angstroms (see col 11, claim 3), and a mode pore diameter in the range of from about 60 to about 90 angstroms (see col 11, claim 4). The catalyst contains up to about 10% by weight of the Group VIII metal (Ni) and up to about 30% by weight of the Group VIB metal (Mo) (see col 5, ln 1-12). The support is a member selected from a group including the instantly claimed metal oxides, i.e., zirconia and titania (see col 11, claim 5).

Applicants are claiming a catalyst consisting essentially of at least one non-noble metal particulate (or lacking of platinum or palladium) and a support. Ward teaches the same, thus anticipates the claims.

With respect to the claimed particle size of claims 1 & 30, Ward discloses a particle size range about 60 to about 90 angstroms, which is less than 100 angstroms, thus met. The claimed particle size of less than 70 angstroms in claims 2 & 31 are also met by the reference since Ward teaches a particle size as low as "about 60" in the lower range, which is less than 70 angstroms.

Art Unit: 1754

Regarding claims 3-6 & 32-35, the instantly claimed particle size range are met since Ward discloses "less than about 10 % of the total pore volume is in pores of diameter below about 50 angstroms" (see Ward at col 5, ln 35-38). "Below about 50 angstroms" encompasses the claimed particle size range, thus met. The claimed particle size range in claim 37 is also met by the reference because the disclosed range falls within the claimed range.

Regarding claims 7 & 36, the instantly claimed metal amounts are met by the teaching of the reference since the disclosed metals amounts fall within the claimed range.

Claim Rejections - 35 USC § 102(b)/103

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 29 & 55 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Ward (U.S. Pat. 4,686,030).

Art Unit: 1754

Ward discloses a catalyst as discussed above, except that the catalyst is not made by the same process as in applicants'.

Even though the catalyst is not made by the same process, the catalyst made is the same as applicants' catalyst. It has been held that "even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method or production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even the prior art product was made by a different process." See *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 14, 27, 28, 41, 53, & 54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ward (U.S. Pat. 4,686,030).

Ward discloses a catalyst as described above, except for the following differences.

Art Unit: 1754

Regarding claims 14 & 41, Ward is silent with respect to the nickel alloy having an fcc crystal orientation. It would have been *prima facie obvious* to one of ordinary skill in the art that the same nickel alloy would possess the same characteristics.

Regarding claims 27, 28, 53, & 54, while Ward does not specifically recite whether the catalyst is compositionally graded within the support, and if the particulates are substantially uniformly distributed throughout the support. It is *prima facie obvious* to one of ordinary skill in the art that the same catalyst would possess the same catalyst structure and the particulates would uniformly distributed throughout the support in view of the particle pore size distributions disclosed in the Ward reference.

9. Claims 25 & 51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ward (U.S Pat. 4,686,030), as applied to claims 1-10, 15-17, 19-22, 30-37, 42-44, & 47-49 above, and further in view of Tsou et al., "hereinafter Tsou", (U.S Pat. 5,171,644).

Ward discloses a catalyst as discussed above, except for the instantly claimed support containing carbon.

It would have been *prima facie obvious* to one of ordinary skill in the art at the time the invention was made to have utilized the instantly claimed carbon containing support in order to obtain an improved and better functional catalyst in Ward, because it is a useful catalyst support as evidenced by Tsou (see Tsou at col 2, ln 42-43).

Art Unit: 1754

10. Claims 18, 24, 45, & 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ward (U.S. Pat. 4,686,030), as applied to claims 1-10, 15-17, 19-22, 30-37, 42-44, & 47-49 above, and further in view of Flytani-Stephanopoulos et al., "hereinafter Flytani-Stephanopoulos", (U.S. Pat. 4,729,889).

Ward discloses a catalyst as discussed above, except for the instantly claimed microcrystalline metal oxide support, and a support containing manganese oxide.

It would have been *prima facie obvious* to one of ordinary skill in the art at the time the invention was made to have utilized the instantly claimed support materials in order to obtain a catalyst having high H₂S removal efficiency and better sorbent stability catalyst in Ward, because they are known as useful catalyst supports as shown by Flytani-Stephanopoulos (see Flytani-Stephanopoulos at col 22, claim 7; col 4, ln 19-21; & col 4, ln 67- col 5, ln 3).

11. Claims 11-13 & 38-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ward (U.S. Pat. 4,686,030), as applied to claims 1-10, 15-17, 19-22, 30-37, 42-44, & 47-49 above, and further in view of Ovshinsky et al., "hereinafter Ovshinsky", (U.S. Pat. 5,277,999).

Ward discloses a catalyst as discussed above, except for the instantly claimed nickel alloy comprising the instantly claimed metals.

It would have been *prima facie obvious* to one of ordinary skill in the art at the time the invention was made to have added manganese to the nickel alloy of Ward in order to obtain a nickel alloy containing manganese having an improved in charging efficiency when use in the electrochemical cell, because Ovshinsky fairly suggests that the addition of the Mn to all of the

Art Unit: 1754

alloys including the nickel alloy results in improved charging efficiency (see Ovshinsky at col 12, ln 40-44).

12. Claims 23, 26, 50, & 52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ward (U.S Pat. 4,686,030), as applied to claims 1-10, 15-17, 19-22, 30-37, 42-44, & 47-49 above, and further in view of Hatura et al., "hereinafter Hatura", (U.S Pat. 5,506,273).

Ward discloses a catalyst as discussed above, except for the following differences.

Regarding claims 23 & 50, Ward does not teach a support comprising fine grained oxides and course grained oxides. However, it would have been *prima facie obvious* to one of ordinary skill in the art at the time the invention was made to have utilized the same support in Ward's catalyst in order to achieve a better catalyst in view of the advantage that the fine grained oxides give smaller catalyst particle size. It is also known in Hatura to use such metal oxide support material in any forms, such as powder spheres, granules, etc. to make a catalyst (see Hatura at col 3, ln 36-42).

Regarding claims 26 & 52, Ward does not disclose a catalyst containing zeolite. However, it would have been *prima facie obvious* to one of ordinary skill in the art at the time the invention was made to have incorporated zeolite into the catalyst of Ward in order to strengthen the physical and mechanical properties of the catalyst, because it is known in the art as a useful catalyst support material as evidenced by Hatura (see Hatura at col 3, ln 39-42).

Art Unit: 1754

Response to Amendment/Arguments

13. Applicants' amendment/response filed on 7/30/01 has been considered, but still remains not persuasive in view of the new grounds of rejections above.

14. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Citations

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Ovshinsky et al. (U.S. Pat. 5,840,440), Lee et al. (U.S. Pat. 5,888,317), Ono et al. (U.S. Pat. 5,278,001), Elliott et al. (U.S. Pat. 5,977,013), Hong (U.S. Pat. 4,849,205), Iyer et al. (U.S.

Art Unit: 1754

Pat. 5,686,375), Simpson et al. (U.S Pat. 5,494,568), Simpson (U.S Pat. 5,403,806), Soled et al. (U.S Pat. 6,162,350), Gray (U.S Pat. Re. 32,104,), & Abdo et al. (U.S Pat. 4,844,792) are cited for related art.

Conclusion

16. Claims 1-70 & 80-89 are pending. Claims 1-55 are rejected. Claims 56-70 & 80-89 are withdrawn due to nonelected (distinct) inventions. No claims are allowed.

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Cam Nguyen, whose telephone number is (703) 305-3923. The examiner can normally be reached on M-F from 8:00 am. to 5:30 pm.


The appropriate fax phone number for the organization where this application or proceeding is assigned is (703) 305-3599.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Nguyen/cnn

cnn

October 17, 2001


STEVEN P. GRIFFIN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700